



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,332	07/30/2003	Hyesook Hong	TI 35165	8758
23494	7590	12/23/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED			POMPEY, RON EVERETT	
P O BOX 655474, M/S 3999			ART UNIT	
DALLAS, TX 75265			PAPER NUMBER	
			2812	

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SK

<b>Office Action Summary</b>	<b>Application No.</b> 10/630,332	<b>Applicant(s)</b> HONG ET AL.	
	<b>Examiner</b> Ron E. Pompey	<b>Art Unit</b> 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7-30-03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 9-12, 14-16 and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Asano et al. (US 6,741,334).

Asano discloses the limitations of:

providing a reticle, said reticle including:

a patterned layer (8, fig. 7) located over a reticle substrate; and

a test pattern located (9, fig. 7) over said reticle substrate, wherein a portion of said test pattern is within a step-distance of a portion of said patterned layer, a variance in said test pattern being indicative of a variance said patterned layer (col. 5, Ins. 45-65);

patterning a material using said reticle; and

visually inspecting said material for light and dark regions, said light and dark regions representing said variance said patterned layer;

wherein said portion of said test pattern is a first portion of said test pattern and said portion of said patterned layer is a first portion said patterned layer and wherein said first portion of said test pattern is within a step-distance of said first portion said

Art Unit: 2812

patterned layer and a second portion of said test pattern is within a step- distance of a second portion of said patterned layer, a variance between said first and second portions of said test pattern being indicative of a variance between said first and second portions of said patterned layer;

wherein said test pattern creates a reflective grating said patterned material and said reflective grating is configured to provide said light and dark regions if said variance in said patterned layer exists;

wherein said reflective grating includes a reoccurring line/space structure;

wherein said test pattern is located in a scribe region defined by said patterned layer(col. 5, Ins. 45-60; wherein the patterned chrome is the reflective grating and the scribe region is the peripheral region outside of the pattern region);

wherein said variance is a systematic variance in critical dimension (CD) in said patterned layer;

patterning a resist material using said reticle;

using said patterned resist material forms a feature of a semiconductor device;

further including visually inspecting said patterned resist material for light and dark regions prior to said using said patterned resist material, said light and dark regions representing a systematic variance in critical dimension (CD) in said patterned resist material(col. 7, Ins. 10-30);

wherein said patterned resist material is used to form multiple features, and wherein said multiple features are electrically contacted to form an operational integrated circuit (col. 1, Ins. 12-35; wherein "LSI pattern" is known by one of ordinary

Art Unit: 2812

skill in the art to refer to a large scale integration pattern for an IC device which will comprise multiple features to form the integrated circuit).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al. (US 64741334), as applied to claims 9-12 and 14-15 above, in view of Ausschnitt et al. (US 5,914,784).

Asano reads on the claims as applied above, but does not disclose the claimed limitation(s) of:

wherein said reoccurring line/space structure has a pitch of less than about  $3/2$  the wavelength in use;

wherein visually inspecting said material includes visually inspecting said material using an optical microscope; and

further including changing a focus on said optical microscope to cause said light and dark regions to become more or less pronounced.

However,

a. Ausschnitt discloses the above claimed limitations regarding:

wherein visually inspecting said material includes visually inspecting said material using an optical microscope; and

further including changing a focus on said optical microscope to cause said light and dark regions to become more or less pronounced in Abstract.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Asano with Ausschnitt, because the optical microscope helps inspect a patterned material.

It would have been obvious to one of ordinary skill in the art at the time the invention to form test patterns with reoccurring line/space structure that has a pitch of less than about  $3/2$  the wavelength in use, since it has been held that where the general conditions, the width of the lines in the reoccurring line/space structure, of a claim are disclosed in prior art, discovering the optimum or working ranges involves only routine skill in the art. (see *In re Aller*, 105 USPQ 233.) Because the pitch of the test pattern will help find variances visually.


#### ***Election/Restrictions***

6. Applicant's election without traverse of claims 9-20 in the reply filed on July 11, 2005 is acknowledged.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ron E. Pompey whose telephone number is (571) 272-1680. The examiner can normally be reached on compressed.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ron Pompey  
AU: 2812  
December 13, 2005

  
**MICHAEL LEBENTRITT**  
**SUPERVISORY PATENT EXAMINER**